

What is claimed is:

1. A wireless telecommunications system which provides prepaid charging for a packetized data service comprising:

a first prepaid packet node (PPN);

a first wireless packet serving node (WPSN) logically associated with said first PPN;

means responsive to a subscriber call initiation, for requesting packetized data service via said first PPN through said first WPSN;

means for maintaining a current balance of a prepaid subscriber account;

means for receiving said current balance at said first PPN.

2. The wireless communications system of claim 1, wherein said balance exceeds a first minimum value, and further comprising:

means for completing a first data connection to said wireless device by said first WPSN in response to said means for returning said balance to said first PPN by said accounting processor, said first data connection supporting said packetized data service.

3. The wireless communications system of claim 1, wherein said balance does not exceed a first minimum value, and further comprising:

means for rejecting said initiation of said call by said first WPSN in response to said means for returning said balance to said PPN by said accounting processor.

4. The wireless communications system of claim 1, wherein said balance does not exceed a first minimum value, and further comprising:

means for sending an indication to said wireless device in response to said means for returning said balance to said first PPN by said accounting processor, said indication informing said subscriber to replenish an amount in said prepaid account; and

means for rejecting said initiation of said call by said first WPSN in response to said

means for sending said indication to said wireless device.

5. The wireless communications system of claim 2, wherein said balance does not exceed a second minimum value, and further comprising:

means for sending an indication to said wireless device in response to said means for completing said first data connection, said indication informing said subscriber to replenish an amount in said prepaid account.

6. The wireless telecommunications system of claim 2, further comprising:

means for decrementing said balance by said first PPN according to a usage of said packetized data service;

means for informing said first WPSN by said first PPN whenever said balance is less than a third minimum value; and

means for discontinuing said call by said first WPSN in response to said means for informing by said first PPN.

5 7. The wireless telecommunications system of claim 2, further comprising:

means for instructing said first PPN through said first WPSN that said call is released by said wireless device in response to said subscriber discontinuing said call;

means for updating said balance by said first PPN in response to said means for instructing said first PPN;

10 means for sending said balance to said accounting processor by said first PPN in response to said means for updating said balance by said first PPN; and

means for modifying said prepaid account by said accounting processor in response to said means for sending said balance to said accounting processor.

15 8. The wireless system of claim 2, further comprising:

a second PPN;

a second WPSN logically associated with said second PPN;

means for detecting a handover event by said second PPN through said second WPSN, said handover event generated by said radio network;

20 means for querying said accounting processor by said second PPN for said balance of said prepaid account in response to said means for detecting said handover event;

means for instructing said first PPN by said accounting processor to update said balance in response to said means for querying said accounting processor by said second PPN;

25 means for returning said balance to said accounting processor by said first PPN in response to said means for instructing said first PPN;

means for responding with said balance by said accounting processor to said second PPN in response to said means for returning said balance to said accounting processor by said first PPN; and

30 means for completing a second data connection to said wireless device by said second WPSN through said second PPN in response to said means for responding with said balance to said second PPN.

9. The telecommunications system of claim 1, wherein said means for calculating said balance by said accounting processor comprises:

means for retrieving an amount in said prepaid account by said accounting processor;
means for retrieving a rate by said accounting processor; and
means for determining said balance from said rate and said amount.

10 The telecommunications system of claim 9, wherein said rate is dependent upon at
5 least one variable selected from the group consisting of a time of day, a day of week, a
subscriber's calling plan, a service location of said wireless device, and a subscriber's level of
quality of service (QoS).

11 The telecommunications system of claim 1, wherein said wireless device is
selected from the group consisting of a mobile wireless terminal and a fixed wireless
10 terminal.

12 The wireless telecommunications system of claim 1, wherein said wireless device
supports at least one wireless technology and wherein said accounting processor adjusts said
subscriber's prepaid account according to a wireless technology utilized by said wireless
device.

13 The wireless telecommunications system of claim 1, wherein said call utilizes
voice over Internet Protocol (VoIP).

14 The wireless telecommunications system of claim 1, wherein said balance
indicates said limited usage selected from the group consisting of a number of packets, a time
duration of said call, a time duration of active transmission, and an amount of transferred
20 information.

15 The wireless telecommunication system of claim 1, wherein said wireless device
supports Code Division Multiple Access (CDMA).

16 The wireless telecommunications system of claim 1, wherein said wireless device
supports Global System for Mobile Communications (GSM).

17 The wireless telecommunications system of claim 1, wherein said wireless device
supports Universal Mobile Telecommunications System (UMTS).

18 The wireless telecommunications system of claim 1, wherein said wireless device
supports Time Division Multiple Access (TDMA).

19 The wireless telecommunications system of claim 1, wherein said wireless device
30 supports Cellular Digital Packet Data (CDPD).

20 A wireless telecommunications system enabling a subscriber of a wireless device
to replenish an amount of a prepaid account, said prepaid account associated with a

packetized service, said wireless telecommunications system communicating to said wireless device through a radio network, said wireless telecommunications system comprising:

a signal processor;

an accounting processor connected to said signal processor through a communications

5 network;

a communications device connected to said signal processor through said communications network;

means for requesting a replenishment of said amount to said signal processor by said subscriber through said communications device; and

10 means for conveying said replenishment of said amount to said accounting processor by said signal processor in response to said means for requesting said replenishment of said amount by said subscriber.

21. The wireless telecommunications system of claim 20, wherein said signal processor comprises a website and wherein said communications network comprises a IP
15 network.

22. The wireless telecommunications system of claim 20, wherein said signal processor comprises a telephone processing unit and wherein said communications network comprises a telephone network.

23. The wireless telecommunications system of claim 20, wherein said
20 communications device comprises said wireless device.

24. A method for providing prepaid charging for a call by a wireless telecommunications system, said call associated with a packetized data service, said packetized data service associated with a wireless device of a subscriber, said wireless communications system communicating to said wireless device through a radio network, said
25 wireless telecommunications system comprising the steps of:

requesting a first prepaid packet node (PPN) through said first wireless packet serving node (WPSN) for said packetized data service by said wireless device responsive to said subscriber's initiation of said call;

30 querying an accounting processor by said first PPN for a balance of a prepaid account of said subscriber responsive to said step of requesting said packetized data service;

calculating said balance by said accounting processor responsive to said step of querying said accounting processor; and

returning said balance to said first PPN by said accounting processor responsive to said step of calculating by said accounting processor.

25. The method of claim 24, wherein said balance exceeds a first minimum value, and further comprising the step of:

5 completing a first data connection to said wireless device by said first WPSN responsive to said step of returning said balance to said first PPN by said accounting processor, said first data connection providing said packetized data service.

26. The method of claim 24, wherein said balance does not exceed a first minimum value, and further comprising the step of:

10 rejecting said initiation of said call by said first WPSN responsive to said step of returning said balance to said PPN by said accounting processor.

27. The method of claim 24, wherein said balance does not exceed a first minimum value, and further comprising the steps of:

15 sending an indication to said wireless device responsive to said step of returning said balance to said first PPN by said accounting processor completing, said indication informing said subscriber to replenish an amount in said prepaid account; and

rejecting said initiation of said call by said first WPSN responsive to said step of sending said indication to said wireless device.

20 28. The method of claim 25, wherein said balance does not exceed a second minimum value, and further comprising the step of:

sending an indication to said wireless device responsive to said step of completing said first data connection, said indication informing said subscriber to replenish an amount in said prepaid account.

25 29. The method of claim 24, further comprising the steps of:
decrementing said balance by said first PPN according to a usage of said packetized data service;

informing said first WPSN by said first PPN whenever said balance is less than a third minimum value; and

30 discontinuing said call by said first WPSN responsive to said step of informing by said first PPN.

30. The method of claim 24, further comprising the steps of:

instructing said first PPN through said first WPSN that said call is released by said wireless device responsive to said subscriber discontinuing said call;

updating said balance by said first PPN responsive to said step of instructing said first PPN;

sending said balance to said accounting processor by said first PPN responsive to said step of updating said balance; and

5 modifying said prepaid account by said accounting processor responsive to said step of sending said balance to said accounting processor.

31. The method of claim 24, further comprising the steps of:

detecting a handover event by a second PPN through a second WPSN, said handover event generated by said radio network;

10 querying said accounting processor by said second PPN for said balance of said prepaid account responsive to said step of detecting said handover event;

instructing said first PPN by said accounting processor to update said balance responsive to said step of querying said accounting processor by said second PPN;

15 returning said balance to said accounting processor by said first PPN responsive to said step of instructing said first PPN by said accounting processor;

responding with said balance by said accounting processor to said second PPN responsive to said step of returning said balance to said accounting processor by said first PPN; and

20 completing a second data connection to said wireless device by said second WPSN through said second PPN responsive to said step of responding with said balance to said second PPN.

32. The method of claim 24, wherein said step of calculating said balance by said accounting processor comprises:

25 retrieving an amount in said prepaid account by said accounting processor;

retrieving a rate by said accounting processor; and

determining said balance from said rate and said amount.

33. A method enabling a subscriber of a wireless device to replenish an amount of a prepaid account associated with a wireless telecommunications system, said prepaid account associated with a packetized service, said wireless telecommunications system
30 communicating to said wireless device through a radio network, said wireless telecommunications system comprising:

requesting a replenishment of said amount to a signal processor by said subscriber;
and

conveying said replenishment of said amount to an accounting processor by said signal processor responsive to said step of requesting said replenishment of said amount by said subscriber.

34. An accounting processor providing prepaid charging for a call in conjunction with a wireless telecommunications system, said call associated with a packetized data service for a subscriber, said wireless telecommunications system comprising a first prepaid packet node (PPN) and a second PPN, said accounting processor comprising:

means for calculating a balance for said call from a prepaid account of said subscriber in response to said first PPN querying said accounting processor for said balance; and

- 10 means for returning said balance to said first PPN in response to said means for calculating said balance by said accounting processor.

35. The accounting processor of claim 34, further comprising:

means for modifying said prepaid account in response to said first PPN sending an updated balance to said accounting processor, said updated balance indicative of a usage associated with said call .

36. The accounting processor of claim 34, further comprising:

means for instructing said first PPN to update said balance in response to said accounting processor being notified of a handover event by said second PPN; and

- 20 means for sending said balance to second PPN in response to receiving said balance from said first PPN.

37. A method for supporting prepaid charging for a call by an accounting processor in conjunction with a wireless telecommunications system, said call associated with a packetized data service for a subscriber, said wireless telecommunications system comprising a first prepaid packet node (PPN) and a second PPN, said method comprising the steps:

- 25 calculating a balance for said call from a prepaid account of said subscriber responsive to said first PPN querying said accounting processor for said balance; and

returning said balance to said first PPN responsive to said step of calculating said balance by said accounting processor.

38. The method of claim 34, further comprising the step of:

- 30 modifying said prepaid account responsive to said first PPN sending an updated balance to said accounting processor, said updated balance indicative of a usage associated with said call .

39. The method of claim 34, further comprising the steps of:

instructing said first PPN to update said balance responsive to said accounting processor being notified of a handover event by said second PPN; and

sending said balance to second PPN responsive to receiving said balance from said first PPN.